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DOCUMENTS SECTION

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MARE ISLAND, VALLEJO, CALIFORNIA
1 April 1948

Committee on Artificial Limbs
National Research Council
2101 Constitution Avenue
Washington, D. C.

March

MONTHLY REPORT OF THE EXPERIMENTAL WORK AT THE ARTIFICIAL
LIMB SHOP, MARE ISLAND NAVAL HOSPITAL

The job classification for an engineer has not been returned from the Area Wage and Classification Office.

The following projects are being worked on:

1. Functional Ankle Joint:

A redesign of the functional ankle joint is being built which utilizes the Adel hydraulic leg contact bearing and a rectangular block of rubber. A metal, hand-fabricated, section incorporation the top of the ankle joint and replacing the ankle block and shin block has been made and incorporated directly into the plastic shin. It is the intent to try these two new designs on legs for patients.

2. Suction Socket:

Work is continuing on the suction socket for all types of stumps.

3. Cineplastic Arms:

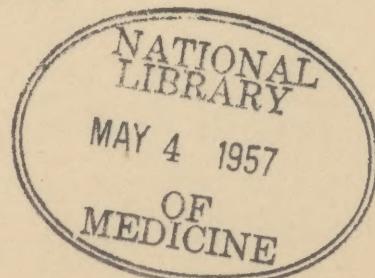
On the new arms for Hans Schuffenhauer, the pulley over which the hook control cable operates has been eliminated and a full cable housing is utilized on a swivel post to replace it.

4. Pronator-Supinator for Above Elbow:

No new units have been installed.

5. Robinson Hand and Cosmetic Glove:

The new design on the Robinson hand provides a much better grip. This new combination appears to be a decided improvement.



6. Soft Bucket and Impression Methods for Below Knee Stumps:

A number of impressions have been taken for below knee stumps in the standing and sitting position while the plaster is hardening. This gives a good impression of the tissues in the posterior part of the knee while sitting. It allows a socket to be constructed which is below the popliteal space. This should allow more comfort to the amputee in the sitting position. A bucket design using this method may not be practical for stumps shorter than three inches but is possible in stumps longer than three inches.

7. Selectron with Fortisan Laminate:

A shin was constructed with four layers of fortisan and sustained one ton compression on testing. This is only 25% of the strength present in a six layer laminate. We intend to field test some shins with four layers of laminate in order to see if they break down under clinical trial.

8. Tilting Table Prostheses:

Drawings have been completed on the new tilting table prosthesis incorporating a hydraulic unit which will produce knee lock on flexion of the hip joint.

9. Functional Joint for Elbow, Wrist and Hips:

This joint is now used routinely on all cases of below elbow. The amputees do not desire a mechanical pronator-supinator when they can use the pronation-supination remaining in their stump.

10. Forged Aluminum Joints:

75 ST forge aluminum joints are being installed routinely now in all cases.

11. Suction Socket Valves:

The new suction socket valve has been completed and we intend to install it in a number of cases for field testing.

12. Mechanical Knee Lock:

Work has been discontinued on the mechanical knee lock.

13. Adel Hydraulic Leg:

The amputee who was wearing the Adel hydraulic leg has discontinued wearing it because he prefers the conventional type leg.

14. Flexible Plastic:

A number of below knee lacers and bicep cuffs have been constructed from flexible plastic and are undergoing field testing.

15. Nylon Belting:

We are using nylon belting for shoulder straps routinely and the amputees prefer it. The buckle required a redesign in order to fit the nylon belting.

16. Parachute Nylon Shroud Cord:

The only complaint with the use of parachute shroud cord for lacing¹ is that it has a tendency to slip while being laced. This has been overcome by lacing the cord through the eyelets from without inward which causes the lacer to lock at each eyelet.

17. Functional Knee Joint:

A leg has been set up with a functional knee joint and is about to be fitted on an amputee.

T. J. CANTY
Commander, MC, USN
Officer in Charge
Artificial Limb Department

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U. S. NAVAL HOSPITAL, MARE ISLAND, VALLEJO, CALIF.
1 April 1948

From: Medical Officer in Command
To: Committee on Artificial Limbs
2101 Constitution Avenue
Washington, D. C.

1. Forwarded.

W. H. PERRY